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This invention relates to apparatus for playing games which may form part of a learning routine.

According to the present invention there is provided apparatus comprising first means forming a flying object,
5 a plurality of flexible elongate elements connected to said first means, and a plurality of support elements for respective ones of said elongate elements.

Preferably the ends of the elongate elements remote from said first means are secured to second means. Conveniently,
10 the second means is actuatable to effect adjustment in length of the respective elongate elements.

Preferably also, the apparatus includes a target over which said first means is manoeuvrable. Conveniently the target includes releasable members and the first means
15 includes means adapted to remove said members from said target. Alternatively the first means may include releasable members and selectively-operable means to release said members.

Conveniently the first means takes the form of an aircraft and the flexible elongate elements are lengths of nylon
20 or other plastics material.

Various embodiments of the present invention will now be described by way of example with reference to the accompanying drawings.

25 Fig. 1 illustrates the principle underlying the present

invention and illustrates an aircraft 10 secured at the ends of four strings 11 which are made of nylon and which pass over support elements 12. The ends III of the strings are free for manual actuation and when each is so actuated the aircraft 10 which forms a flying object is manoeuvred within the confines of the area bounded by the support elements 12. The elements 12 may be in the form of upstanding posts carrying swivel joint pulleys 13 around which the strings 11 are entrained or they may take the form of wall mounting elements 14, either releasable or permanent and they may or may not include swivel mountings. Various forms of the pulleys 13 are illustrated in Fig.2. The support elements 12 may take any convenient form such as chairs if the apparatus is used indoors.

The ends III of the strings 11 may be attached to winch devices 14 which in turn may be secured to a fixture or to the operator's person for manual operation or for manually-actuated power-assisted operation. Alternatives are illustrated in Fig.3.

The aircraft 10 may be provided with one or more hooks 15 depending from its undercarriage and by virtue of the adjustability in effective length of the strings 11 the aircraft can be manoeuvred onto a target 20, Fig.4, on which releasable members 21 are located. The members 21 may take the form of toy soldiers such as are illustrated in Fig.5, incorporating pick up rings 16 but any other form of member 21 may be utilised. For example, the target 20

could take the form of a map of the world and the members 21 are in the form of the individual countries of the world.

Alternatively, the target 20 can be formed in two portions one of which stores a plurality of members 21 taking specific shapes and the other portion takes the shape of a map of the world and the aircraft is utilised to lift a selected member 21 and locate it on a selected country. For example, the member 21 could represent copper ingots and the object would be to place the member 21 on a country producing copper.

Fig. 6 illustrates two forms which the aircraft 10 may take but any other form of flying object appropriate to the game could be used. For example a space craft could be used.

The apparatus according to the present invention may be utilised in a variety of games such as war games. For example, one of the members 21 could be in the form of an aircraft carrier and the object or aircraft 10 could be used to transfer men and/or equipment onto the aircraft carrier from an island or a stranded aircraft carrier, for example.

The aircraft 10 could be equipped with a bomb bay and a string like the strings 11 arranged to open the bay at a desired location. The location could be denoted by a member 21 on the target which could incorporate a scale by means of which a score for accuracy could be awarded. Instead of bombs the aircraft 10 could be equipped with parachutists.

The target 20 may take the form of an aircraft landing

strip with markings permitting a score accuracy to be awarded. The target 20 may include a hidden object which if located by a member landing thereon provides an additional score.

- 5 The aircraft 10 could incorporate a searchlight for night operation and could include one or more strings 11 permitting orientation of the aircraft 10 in addition to maneuverability over a target. All of the strings 11 could be detachable to permit the aircraft to be landed and released. The aircraft 10 could be used in combination with members 21 arranged on a race-track or a conveyor belt.

- It will be appreciated that the apparatus of the present invention may be utilised in a modified form. For example, the winches 14 could all be mounted adjacent one another for operation by a single operator (.i.e. two hands). Alternatively the winches 14 could be under the control of a single element controller arranged to cause actuation of a single winch on movement of the controller in a specific direction. Instead of winches the ends 11A of the strings 11 could be controlled by pneumatic means or even by springs. In a more advanced form the ends 11A of the strings could be controlled by a computer-operated device which is servo-controlled according to the location of the aircraft 10 over a target.
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- Although reference has been made to the provision of hooks and rings or lifting elements on the members 21 it
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- 5 -

will be appreciated that any simple form of interfitting arrangement or inter-engaging arrangement could be used, either permanent magnets or, in the case of the aircraft electromagnets, under control of an operator via an additional string 11.

The target 20 may incorporate scenery which may be removable and of course may be of any dimension which is suitable and convenient. For example, the target 20 may be about 20 inch by 20 inch and the supports 12 may whereby the apparatus is adapted for use on a table top. The strings 11 are hidden by passing through the posts. The sheaves or pulleys around which the strings 11 are entrained may incorporate ball-race bearings to reduce friction. The aircraft 10 may incorporate a noise emitter to simulate aircraft engine noise, the emitter being battery-operated, if so desired by means of a further string 11. Furthermore, the aircraft may be suspended from a ring to which the various strings 11 are secured, the aircraft being adjustable in orientation about the axis of the ring by means of a small motor within the aircraft.

The foregoing examples are not intended to be exhaustive and although some of the games mentioned above are for amusement purposes others may be used as part of a learning routine. Various learning routines may be envisaged utilising the apparatus of the

invention. For example, it might be required to learn the prey of different forms of wild life. The predators could then take the form of the flying object 10 and the prey would be in the form of members 21. Alternatively, the location of historical events could be a required learning routine. Likewise the location of various discoveries.

It will now be appreciated that the apparatus in accordance with the present invention may be utilised in games with or without a learning routine and that the games may be played by a plurality of persons or by a single person depending upon the number of strings and upon the arrangements for moving or shortening these strings. The games may be played indoors or out-of-doors and may utilise equipment of almost any dimensions.

Further to the descriptions laid out in the previous paragraphs the variations of the invented principles are as follows.

See Figure 7. Element 10 relates to a baseboard which may be of any dimension and may be made of wood, nylon, plastic or cardboard. The said baseboard may take the moulded or appropriate shape of many different types of games such as:

- a) Air Sea Rescue involving lifting stranded men in water onto a dry land in model form.
- b) Model Oil Rigs being built in the North Sea taking any form.
- c) Formulation of a jigsaw puzzle.
- d) Building of any type of building in the world.
- e) Having a lunar base landing space craft on the moon.

- f) Ornithology, learning birds of prey
- g) Building the map of the world or any country, therefore, forming a learning routine.
- h) A game where different coloured pyramids with numbers stamped on the base can form a learning routine of relating colours to numbers.
- i) Games involving landing aircraft on model ships which could be floating on water.
- j) The dambuster game where the baseboard is shaped into a dam and valley scene, with the object of the said game being to burst open the dam gates releasing water marbles or any substance that is convenient. The said substance would knock down a variance of embankments, which could take the shape of soldiers, trucks, guns, houses, animals or any type of article that would be of interest.
- k) Mountain Rescue, lifting injured climbers off a mountainside and landing the said climber on an ambulance.
- l) Using a six pole structure (See Figure 8) a plurality of persons could have a competitive type of game and utilise two flying objects see (Figure 1 Element 10) to link up in mid air.
- m) Several types of aeroplanes could be used forming an aircraft identification game lifting the various types of planes.
- n) The Flying object (See Figure 1 Element 10) could take the shape of a child's swing and a doll or other such like models could be seated and manoeuvred using the co-ordinating principle (See Figure c. Element 11).

- b) Use in an amusement machine enclosed in glass (See Figure 11), the machine could be operated and controlled by one, two, three or four persons and could be used to pick up objects. The machine could be electrically or manually controlled and could be stationed in public places.
- 5 c) The principle could be used in the creation of a outdoor public park model where flying object (Figure 1 Element 10) could take the shape of a seat for a child. Four permanent corner posts could be embedded in concrete (See Figure 12). This apparatus could be operated by hand controls by two persons, turning two reels each.
- 10 A child could be seated (See Figure 12 Element 10) and manoeuvred around by his or her parents.
- d) Using four upright posts which may or may not be permanently fixed, and having a manually or electrically operated reel at each corner;
- 15 (See Figure 13) and (Element 10). The area of play could be of any dimension and could involve an area of water whereby ships or aircraft carriers could be floated. The object could be to land a helicopter on the deck of a carrier. However, the area of play could involve almost any objects that would create a play or learning routine. The corner posts could be fitted with a seat
- 20 whereby persons unable to stand could be seated and operate the reels in comfort (See Figure 13 Element 11). The tops of the said upright post could have free running pulley wheels which are capable of swivelling in an arc of ninety degrees according to where the flying object is manoeuvred within the area of the fixtures.
- 25 The flying object could take the shape of a weighted piece of metal which contains a swivel hook (See Figure 13)

- o) The said baseboard could be shaped into a jungle scene with trees and dense undergrowth. Animals such as monkeys, gorillas, baboons could take the place of (Figure 5 Element 21) and be moved around the treetops using the principle, therefore forming part of a ply and learning routine.
- p) The said baseboard could have the shape of many, indeed almost limitless variations which could be of any dimension and take shape such as treasure trail games, barrage balloon games, coconut shy games, loading of ships.
- 10 In another context flying objects (Figure 1 Element 16) could take the shape of an aeroplane, flying saucer, bird of prey, helicopter, prehistoric animal with two, three or four electrical or battery operated motors built on top (See Figure 9) which could be operated by a single controller who could operate the motors, therefore taking in or
- 15 letting out lines which in the first instance would be attached to four fixtures (See figure 9 Element 10). This apparatus could be set up outdoors or indoors and could utilise any type of fixture (See Figure 2 Element 1A). The ends of the lines could be attached by hooking, knotting, or by using a sucker which could affix the ends to a flat
- 20 surface. Various other uses of the invented principle are as follows:
- a) Used in a fairground or showground stall game (See Figure 10) and used as a game of picking up objects and landing them in a certain time or picking up a delicately balanced object (See Figure 10 Element 10) and landing it without overbalancing. The controls
- 25 be manual or electrically operated (See Figure 3 Element 14)

Element 12) with four eyelets which allow the four way suspension to be attached by knotting or by any other means. The flying object could be magnetic and controlled by a switch which could be situated at one corner post. The electrical current could pass along a wire or steel part of the suspension.

9) As well as having a showground stall interest this invented principle could be used to create a showground model for children where the said flying object could take the shape of an enclosed cabin capable of seating a plurality of children and being operated by a single element controller and the said cabin could be manoeuvred within the confines of four fixtures. (See Figure 14) The fixtures could take the shape of existing walls, metals, where swivel pulley wheels could be attached.

It will now be appreciated that the basis of the invention is a plurality of lines when joined together by a centre piece, can allow the centre piece, which takes various shapes and forms as illustrated, to be manoeuvred anywhere within the confines of four or more fixture points picking up or landing any object.

The support columns (Figure 7 Elements 11) may be of wood, metal, nylon or plastic and may be of any size that is convenient. They also may take any shape that is removeable or can be hinged for easy storage. They may have small holes in them to allow free running of the suspension. See Figure 7. Below the said baseboard there may be four electrically or operated by battery motors which control the movement of the suspension. The said motors will have two movements forward and reverse. Various ways of operating these motors are now described.

These may be a switch at each corner whereby the suspension could be operated by four persons by pressing the switch forward or reverse, whichever the case may be. It may be that a control unit could be built to house two separate switches to allow the suspension to be operated by two persons.

It may also be that a single control box could be devised and the suspension and flying object could be moved in six distinct directions. Four horizontal movements i.e. forwards, backwards, sideways left and sideways right, also up and down. The said control box could contain a single control stick and when it is moved in a certain direction as stated above it activates the motor switches to allow it to move in the desired direction. In further controlling of the suspension it could be done by remote control utilising radio waves to operate the switches which would allow an operator to guide the flying object from a distance and not being physically attached to the said apparatus.

This method of single control would be applicable to all variations of the fourway suspension including amusement machines, showground stall interest and childrens playground models.

It also may be that the baseboard is of a triangular shape (See Figure 15) and the model may only have three parts to the suspension and be operated by one, two or three persons. This model may be operated by electrical motors or manually operated reels.

5 The said baseboard may be of any shape with any amount of supports to allow actuation of the flying object from any direction within any dimension.

It will now be appreciated the basis of the invention is a type of lifting apparatus which can be controlled by many different
10 methods. The play learning and educational variations that the lifting apparatus involves may very well utilise any objects or everyday things on this earth, to be rebuilt in a variety of ways involving puzzles, numbers, colours, buildings,

The fourway, more or less, system of manoeuvring a centre piece
15 may be used in a horizontal form, whereby, that the centre object could be manoeuvred on any type of surface, above or below the said object, which could scroll a design on the said surface, which may be of glass, paper, cardboard, metal etc., the centre object, which may or may not be a pencil, ink holder, piece of metal, would be controlled by four dials,
20 each one controlling an end of the elongate element (See Figure 16)

The base of the model (See Figure 7) may be a series of cardboard, nylon or paper and having the same pattern moulded, drilled or designed on the wood, plastic, or nylon base the said cardboard could be removable therefore having dozens of different games utilizing the
25 same baseboard